Truly a "Learning Environment"?: The Efficacy of Manaba for Emergency Remote Teaching

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Abstract

This paper reviews the Manaba Learning Management System (LMS) for use at Japanese universities within the context of Emergency Remote Teaching (ERT) necessitated by the COVID-19 pandemic. First, the paper gives an overview of the development of – and the government response to – COVID-19 in Japan. Next, it goes over the various functions of Manaba and the claims for its effectiveness made by its development team. Then it explains the differences between online teaching and ERT. Finally, the paper discusses the strengths and weaknesses of Manaba, determining that it is, overall, an effective educational platform under ERT conditions.

Introduction

On January 15, 2020, Japan's Minister of Health confirmed its first case of COVID-19, an acute respiratory disease caused by the novel coronavirus first identified in Wuhan City, Hubei Province, China in late December 2019. In the following weeks, as the number of daily confirmed coronavirus cases in Japan grew, government leaders took action to address the public health crisis. On January 30, 2020 – the same day that the World Health Organization declared COVID-19 to be a "pandemic" – Prime Minister Shinzo Abe established the Novel Coronavirus Response Headquarters at his official residence. In an address to the nation, he expressed his Cabinet's intention to closely monitor the virus and to swiftly implement measures to slow its spread in Japan. "I ask the Government to work as one," he said, "and to make necessary decisions and execute them without being hesitant, putting highest priority on the protection of lives and health of the public" (Prime Minister of Japan and His Cabinet, 2020, para. 7).

One government leader who responded to Abe's call for speed and resoluteness in decision-making about the coronavirus was Tokyo Governor Yuriko Koike, who held an emergency press conference on March 25, 2020. In her remarks, Koike expressed concern for the recent daily upsurge in coronavirus cases in Tokyo and asked for the cooperation of all Tokyo residents to stem to the tide of infections. Two weeks later, on April 10, she publicly requested the temporary closure of six categories of businesses in Tokyo: amusement facilities; sports and recreation facilities; commercial facilities; event and exhibition venues; theaters; and – most notably – universities and cram schools (Karube & Nagano, 2020).

Perhaps in anticipation of closure requests such as Koike's, administrators at a number of universities throughout Japan had begun exploring alternatives to purely face-to-face classroom teaching (at least for the Spring 2020 semester) as early as mid-March. In fact, Makoto Gonokami, the President of Tokyo University – an institution which is considered to be a benchmark in postsecondary education policy-making in Japan – announced on March 18 that the university would cut down on the number of classes to be conducted in-person, and would instead encourage its faculty and students to embrace remote education (Gonokami, 2020).

Other Japanese universities promptly followed Tokyo University's lead, with the majority initially postponing the start of the Spring 2020 term, and then eventually making the decision to move all of their courses online. According to statistics released by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT), 73.3% of national universities, 66.0% of public universities, and 57.2% of private universities opted for distance

classes by June 1 (MEXT, 2020). To accommodate faculty who still wished to conduct live lessons, some universities promoted the use of synchronous Web-conferencing tools such as Zoom Meetings and Microsoft Teams. Many more, however, advocated the use of asynchronous Learning Management Systems (LMSs) as spaces in which teachers and students could interact with each other and with course material more flexibly and securely, i.e. without personal communication in real time. Indeed, many Japanese universities had required the use of LMSs since long before the coronavirus pandemic began, in the belief that "the LMS helps institutions maintain the integrity of their educational programs and enables faculty to effectively and efficiently develop courses, deliver instruction, and facilitate communication, foster collaboration, and assess students" (Wright et al., 2014).

This paper seeks to determine if and to what extent Manaba, a platform which has been in use at a number of educational institutions since its inception thirteen years ago, is effective as an LMS specifically during this time of Emergency Remote Teaching (ERT).

Overview of Manaba

The proprietary LMS called Manaba was first developed in 2007 by ASAHI Net, Inc., a Japanese Internet Service Provider (ISP), in collaboration with two private universities in Japan. The name "manaba" is a coined term which combines the Japanese words *manabi* (学び, "learning") and *ba* (場, "environment"). The idea is that the Manaba system is the environment in which learning takes place, with the purpose "to support the qualitative enhancement of education and the activation of students' out-of-class learning" (ASAHI Net, Inc., 2019, Ritsumeikan University Case Study section). Manaba is used in 250 schools and 97 universities throughout Japan (as of April 2020); therefore, one in five Japanese university students has some familiarity with the LMS (based on the number of university students and Manaba users nationwide in 2019) (ASAHI Net, Inc., 2019).

In its marketing materials for Manaba, ASAHI Net, Inc. seems to follow the vaunted "Rule of 3," which postulates that complicated concepts are most successfully communicated in groups of three (Clark, 2019). For example, Manaba's logo, which appears in numerous iterations on its dedicated website, is a three-petaled leaf that is green at each petal's tip and blue in the space where the petals intersect, representing the three groups of people who exist and interact within the "learning environment" provided by the platform, namely, teachers, students, and school administrators. In addition, Manaba's main features are represented as a trio. They are: ePortfolio (where students can accumulate and be assessed on evidence of

their learning); Course Management (where teachers and students can communicate effectively through the transmission of assignments and surveys); and Communities (where all users can create social groups based on shared interests) (Takekawa, 2012). Finally, three adjectives are used to describe the qualities of Manaba which make it particularly attractive to users. Interestingly, these adjectives are written in English, despite Manaba's website being written primarily in Japanese. They are:

1. *Easy* – Manaba's software is familiar, and it is enhanced by easy navigation and an intuitive interface.
2. *Secure* – The maintenance system is safe and reliable, and the cloud uses secure ISP infrastructure.
3. *Simple* – The functions themselves are simple to understand and simple to use, and overall operation is smooth.

(ASAHI Net, Inc., 2019)

"The simplicity," the website reiterates, "is combined with an ease of use and an architecture that allows hundreds of simultaneous accesses without degrading user experience" (ASAHI Net, Inc., 2014, Carefully Selected Functionality for Convenience section).

Online Teaching vs. Emergency Remote Teaching

Before discussing whether or not Manaba lives up to the claims for efficacy made by its developers, it is important to differentiate between online teaching and Emergency Remote Teaching. Simply, the former is a natural educational trajectory in our increasingly technologically-enabled world, which LMSs like Manaba were initially designed to support, while the latter is a matter of pedagogical necessity brought about by widespread crises such as the outbreak of COVID-19. One reason for the importance of drawing a line between the two is because conflating online teaching with ERT could make school administrators, teachers, and students vulnerable to errors in their implementation and use of LMSs (Bozkurt & Sharma, 2020).

Online teaching (or "E-teaching") is education that takes place through the Internet, at flexible times and in various places. Optimally, it serves as a primary mode of teaching which, prefaced by thoughtful consideration of students' needs, "provides learners agency, responsibility, flexibility, and choice [and] aims to create an effective learning ecology" (Bozkurt & Sharma, 2020, p. ii). Key features of online teaching are: purposeful design and

development; lack of urgency; long-term capability; inclusion of multiple, varied resources; interest and support of teachers and administrators; and voluntary involvement of students.

ERT is similar to online teaching in that it supplies flexible, Web-based educational access; however, it is not meant to be a main mode of teaching. In fact, ERT functions as a stop-gap measure whose purpose is "not to recreate a robust education ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis" (Hodges et al., 2020, Emergency Remote Teaching section). Thus, ERT, in direct opposition to online teaching, is denoted by: rapid activation in response to something dire that is beyond human control; intention for short-term use only; lack of resources; lack of interest and support of faculty and staff; and involuntary involvement of students.

The contrast between online teaching and ERT has implications for the criteria an LMS must meet in order to be considered effective in university courses. For example, although teachers and administrators may wish to consider an LMS's future scope when deciding whether or not to use it for online teaching, such a consideration is less necessary in an ERT context, when speed of implementation is crucial. Indeed, when it comes to ERT, a lengthy list of LMS criteria can be reduced to five key questions. They are:

1. Is the LMS easy to use? In other words, does it allow users to log in and upload or access learning content in an uncomplicated fashion?
2. Does the LMS support a variety of content formats? In other words, are users able to interact, in a number of different ways, with multiple types of informative and evaluative materials?
3. Does the LMS include motivational elements? In other words, does it enhance learning with game mechanics and/or collaborative social tools?
4. Is the LMS reliable? In other words, does it have many system errors or failures? Can users expect to follow the same rules and pathways each time they use it?
5. Does the LMS provide detailed information? In other words, does it give users enough options for reporting on educational content and learning progress?

(Brandt, 2019)

Strengths of Manaba for ERT

Ease of use

The Manaba LMS is essentially quite easy to use. Initial log-in is uncomplicated, requiring only the inputting of a user's unique ID number and password. After log-in, the user

is directed to their personalized My Page, which shows all the courses they teach (if the user is a teacher) or all the courses they are enrolled in (if the user is a student). Helpfully, the user can choose the format in which to view the courses (via Thumbnail, List, or Timetable) and can choose whether to view Current Courses, Past Courses, Upcoming Courses, or All Courses (these options appear in a dropdown menu at the top of the page).

The layout of My Page contributes to Manaba's ease of use in that it successfully minimizes the user's cognitive load, which is defined as "processing that takes up mental resources, but doesn't actually help users understand the content [of a web page]" (Whitenton, 2013, para. 3). My Page's layout achieves this by avoiding visual clutter, such as redundant links and needlessly intricate typography, and by offloading tasks to images or icons (Whitenton, 2013). The label for each course, for example, does not contain expository text; rather, to expedite navigation, it features four easily understood icons: a bullhorn, indicating that Course News has been posted; a pencil with an exclamation point hovering over it, indicating that material has been posted which requires response or submission on the part of the student; a piece of paper overlaid with a checkmark, indicating that grades for a submission have been posted; and a speech bubble, indicating that one or more comments have been made on the class Forum.

Indeed, in a survey given to forty-six freshman students at Asia University, who had used Manaba in their English courses during the Spring 2020 semester, respondents affirmed Manaba's ease of use, particularly in terms of navigating the interface. Twenty-three answered "Strongly Agree" and 18 answered "Agree" when asked their opinion of the statement "I found it easy to find and submit assignments on Manaba." Twenty-one answered "Strongly Agree" and 14 answered "Agree" when asked their opinion of the statement "I found it easy to find and submit tests on Manaba" (see Appendix).

Support of a variety of content formats

Manaba tends to support the use of myriad content formats, for various types of educational materials and activities. According to some teachers, this fact makes it less likely that a teacher who has already prepared course items – or who must prepare them quickly – will have to make sweeping adjustments when incorporating them into the LMS (T.R. Fairchild, personal communication, September 9, 2020). For instance, within Manaba, when a teacher navigates to a particular course page from their My Page, the following types of available activities appear in distinct tabs at the top of the page: Tests, Surveys, Assignments, Projects, Grades, Forum, and Resources. Material can be inputted for each activity in a

number of different ways. In Tests, a teacher can input material for three different test types – Autoscore, Manual Score, and Exercise – via the browser. There are multiple categories of test questions available, and the teacher can choose whether or not to make the answering of particular questions required for submission. In Assignments, a teacher can input material (and a student can submit material) either via the browser or by uploading multiple files, including documents, images, and slides. Likewise, both browser-based and file-based submission of materials is allowed on the Forum and in Resources.

Inclusion of motivational elements

Manaba incorporates several different motivational tools. For instance, there are some gamification principles included in the system, such as the fact that students are able to view the Maximum Score, Minimum Score, and Average Score for each Test or Assignment they submit. This allows students to track their position among their classmates, which boosts their own sense of progress and intrinsically motivates them to become more engaged in a course (Brandt, 2019).

The most motivational aspect of Manaba, however, is possibly the Forum, where a teacher can facilitate discussion and debate by creating a New Thread for students to comment on. During a time of widespread social isolation, social tools such as the Manaba Forum create much-needed virtual communities among teachers and students, and act as extrinsic motivators of students' commitment to their courses. In fact, positive comments in the student survey referenced above were overwhelmingly related to the students' enjoyment of using the Forum. They included "I like [the Forum] because [I] can know about other people's personalities and so on. I enjoyed reading it," "I liked seeing everyone's comments on [the Forum]. It was interesting because there were various opinions and ideas," and "It was the best that I could know about everyone's hobbies and tastes through the thread on Manaba" (see Appendix).

Weaknesses of Manaba for ERT

Reliability

It can be argued that Manaba is unreliable in several ways. For one thing, it has proven to be vulnerable to system errors, particularly when used at multiple institutions simultaneously. At the end of April, as several universities began their distance classes, the Manaba server crashed, displaying the "500 Internal Service Error" message in lieu of its log-in page (S. Svengie, personal communication, April 23, 2020). In response to this, on April

24, 2020, ASAHI Net, Inc. announced that the maximum file size of an upload to Manaba would be reduced from 50 MB to 10 MB (although previously uploaded materials were unaffected). The Academic Office of Ritsumeikan Asia-Pacific University, among other institutions, released updated Manaba guidelines shortly thereafter, advising students to avoid overloading the server by downloading course materials too close to the start time of a lesson (Ritsumeikan Asia Pacific University Academic Office, 2020).

The Manaba LMS is also unreliable in its handling of human errors committed by its users. In other words, Manaba cannot be relied upon to make internal adjustments if mistakes are made by a user. For example, when a teacher posts Assignments to a course, the system automatically numbers the Assignments in the order in which they were posted, with the earliest post given the lowest number. Unfortunately, if the teacher realizes after posting several Assignments that they have made a mistake and deletes an item, Manaba simply deletes the entire entry, *including its number* – there is no function to renumber the remaining Assignments to reflect the updated order. Such a lack of functionality increases the amount of time a teacher must spend checking and double-checking the organization of materials they have input into the LMS. As one teacher lamented, "Preparation can be completed in two hours for a face-to-face class … My salaries didn't change but my working hours became longer [during ERT]" ("Shift to online classes," 2020. para 7). Clearly, it would be better for teachers if Manaba incorporated options for automatic or manual renumbering of items.

Provision of detailed information

In many cases, Manaba does not provide enough details about students' engagement with course material. For example, in Tests, a student's total score is determined by pattern-matching. Therefore, if a student makes a small error in a Text Line question on an Autoscore Test, such as an error in spelling, punctuation, or capitalization (for English tests), their entire answer is marked as incorrect. There is no option for a teacher to enter multiple correct answers, or to denote key words that would allow partial credit to be given, which forces the teacher to review Text Line answers manually, thus defeating the purpose of an Autoscore Test. In an effort to try to avoid overwork, some teachers have taken to removing the more subjective question types (such as Text Line questions) from their tests entirely, or to constantly stress to their students that they must pay close attention to minor mistakes which likely would be forgiven by a human scorer. "I know that some students will not understand the mistake [no matter what]," one teacher remarked. "[They] come away incredibly frustrated" (J. Tomei, personal communication, April 27, 2020).

A teacher is also prevented from giving detailed feedback to students on the Assignments they have submitted via Manaba. When a teacher marks a student's submission, they have the option to enter a Score and a Rating numerically into the dedicated Grade box. They are also able to type short remarks into an area labeled Feedback. However, the only place where a teacher is able to *upload* feedback (such as an annotated or corrected version of a student's written assignment) is via a Comment button, which exists outside of the Grade box. Because of its outside placement, a student can see a teacher's Comment on their Assignment before Grades have been registered in the system. This is, at best, confusing, and at worst, divisive for the students, who may be unhappy to learn that peers received a Comment much earlier in the grading process than they did. A reporting system which allows a numerical score, teacher remarks, and uploaded feedback to appear in the same place and at the same time, would be much more useful for an LMS.

Suggestions for Future Study

The findings presented in this paper should be considered in light of some limitations. The first limitation concerns the lack of longstanding prior research studies into ERT warranted by the COVID-19 crisis in general, and the use of Manaba as an ERT-appropriate platform in particular. As COVID-19 has been a global reality for under two years, there has not been much opportunity for researchers to assert what effective ERT should look like under it, or to give their verdicts on whether or not Manaba is successful under ERT conditions. The second limitation deals with the fact that the research herein is qualitative, collected from personal observations, communications, and a survey. Therefore, the data might be colored by selective memory (in the case of observations and communications) and participants' lack of fluency in the language in which research was conducted (in the case of the survey, which was in English only, and might, therefore, not precisely reflect students' opinions). With these constraints in mind, future study could focus on how Manaba fares as an ERT LMS after one full academic year's use at Japanese universities. In addition, future researchers could conduct their studies in both Japanese and English, not only to ensure the accuracy of survey responses, but also to compare the use of Manaba's Japanese interface with the version that is translated into English.

Conclusion

The Manaba LMS, overall, serves as an effective educational resource during the difficult period of Emergency Remote Teaching in response to the COVID-19 crisis. Indeed,

as one negative aspect of ERT – which sets it apart from online teaching – is the rapidity with which curricula and materials must be developed and made accessible to students, the simplicity of Manaba is of particular value. With an uncomplicated log-in and an unfettered layout, Manaba can be seen as a useful educational option for both teachers and students alike. In addition, the platform helps users to avoid cognitive overload through its support of various content formats and through its use of motivational tools such as gamification and the community-building class Forum. However, it is important to acknowledge that there are also drawbacks to using Manaba. For one thing, Manaba does not have across-the-board reliability and functionality, particularly when factoring in human error. For another, Manaba's approach to providing practical information about learning content and student progress to its users is fairly incomplete.

In an ideal world, there would be no need for ERT and, by extension, no need for educational platforms appropriate for use during international crises. However, in *our* world, which does require university teachers, students, and administrators to adjust their attitudes and expectations with regard to what is possible in an educational context, Manaba provides a straightforward and secure educational environment. In this way, the Manaba LMS fulfills the goals of its developers to connect educators and the educated to each other and to the course material with which they interact (ASAHI Net, Inc., 2014).

References

ASAHI Net, Inc. (2014). Manaba course. https://web.archive.org/web/20140301190432/http://manaba.jp/en/about.html

ASAHI Net, Inc. (2019). Manaba. https://manaba.jp

Bozkurt, A. & Sharma R.C. (2020). Emergency remote teaching in a time of global crisis due to Coronavirus pandemic. *Asian Journal of Distance Education*, 15(1), i-vi. https://doi.org/10.5281/zenodo.3778083

Brandt, D. (2019, August 14). 8 Key Features of any Learning Management System (LMS). https://lmschef.com/key-lms-features/

Clark, B. (2019, April 2). How to Use the 'Rule of Three' to Create Engaging Content. https://copyblogger.com/rule-of-three

Gonokami, M. (2020, March 18). Message from President Gonokami Regarding the University Response to the Coronavirus Disease 2019. https://www.u-tokyo.ac.jp/en/about/COVID-19-message.html

Hodges, C., Moore, S., Lockee, B., Trust, T., and Bond, A. (2020, March 27). The Difference Between Emergency Remote Teaching and Online Learning. *Educause Review*. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Karube, R. & Nagano, Y. (2020, April 10). Tokyo names businesses to shut under state of emergency. *The Asahi Shimbun*. http://www.asahi.com/sp.ajw/articles/13287271

Ministry of Education, Culture, Sports, Science and Technology-Japan. (2020). Impact of COVID-19 pandemic on HE and MEXT's main countermeasures—Starting period for classes and promotion of utilization of distance learning. https://www.mext.go/jp/en/content/20200707-mxt_kokusai_000005414_02.pdf

Prime Minister of Japan and His Cabinet. (2020, January 30). Novel Coronavirus Response Headquarters. https://japan.kantei.go.jp/98_abe/actions/202001/_00034.html

Ritsumeikan Asia Pacific University Academic Office. (2020). Regarding the notice for Downloading Course Materials on manaba. http://en.apu.ac.jp/academic/page/lms/Regarding_the_notice_for_Downloading_Cous e_Materials_on_manaba_E.pdf

Shift to online classes leaves Japan's university teachers exhausted. (2020, May 24). *The Japan Times*. https://www.japantimes.co.jp/news/2020/05/24/national/university-teachers-japan-exhausted-online-classes/

Takekawa, T. (2012, June 7-8). *Collaborative Learning System: What manaba means for the future of Globally Networked Learning?* [Conference presentation] 2012 COIL Conference, Albany, NY, United States.

Whitenton, K. (2013, December 22). Minimize Cognitive Load to Maximise Usability. https://www.nngroup.com/articles/minimize-cognitive-load/

Wright, C., Lopes, V., Montgomerie, T., Reju, S., & Schmoller, S. (2014, April 21). Selecting a learning management system: Advice from an academic perspective. *Educause Review*. https://er.educause.edu/articles/2014/4/selecting-a-learning-management-system-advice-from-an-academic-perspective

Appendix: Freshman English End-of-Course Survey Results (Spring 2020)

Overall Impressions of Manaba	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
I found it easy to find and submit assignments on Manaba.	0	3	2	18	23
I found it easy to find and submit unit tests on Manaba.	0	5	6	14	21
It was helpful to receive grades and feedback from the teacher via Manaba.	0	1	4	16	25
It was helpful to access information, audio files, and assignment answers in Manaba "Resources."	1	2	4	20	19
Overall, I enjoyed using Manaba.	0	5	10	12	19

Positive Comments about Manaba
I like thread questions on Manaba.
It was good that I could concentrate on my tasks silently.
There are clearly showed the content of the assignment.
I like thread because it can know about other people's personalities and so on. I enjoyed reading it.
I liked the week's thread. It was interesting to read the classmates' comment. I was looking forward to reading.
I liked what I can do at my favorite time best.
I like the test and the report is clearly divided about manaba.
Tasks are easy to do because the date and time are written.
I liked seeing everyone's comments on "Question for Tuesday." It was interesting because there were various opinions and ideas.
I liked question threads.
I like the thread assignments on manaba that come every Tuesday. It's a lot of fun as I talk to you and everyone in the class.
I found easy to find assignment.
It was easy confirm.
It is very easy to understand information.
My favorite was Thread on Manaba because it was interesting to see what everyone thinks.
The good thing about manaba is that it clearly states the due dates of assignments and the elapsed time of the tests, so I was able to go through the assignments systematically.
We can submit and take an examination when we felt like doing.
Easy to submit assignment.
It was the best that I could know about everyone's hobbies and tastes through the thread on Manaba.
It was fun to see everyone's opinions on Tuesday and Thursday assignments.